

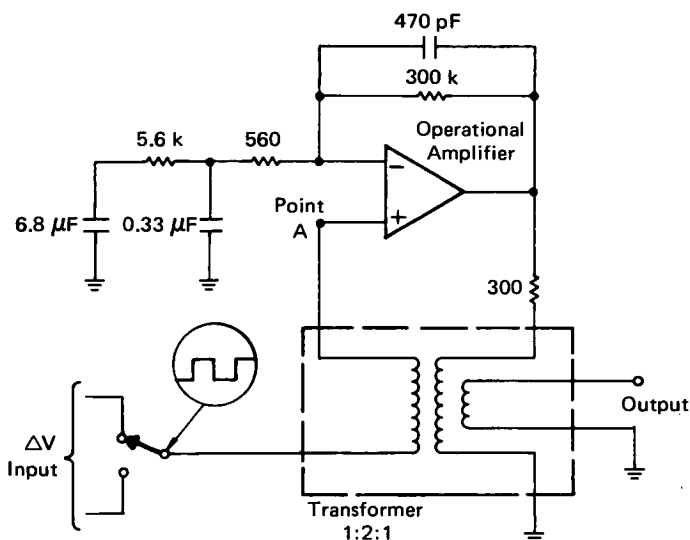
NASA TECH BRIEF

Langley Research Center



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Isolated Transfer of Analog Signals



Schematic for Isolated Transfer of Analog Signals

A technique has been devised to transfer analog signal levels across a high isolation boundary without circuit performance being affected by magnetizing reactance or leakage inductance. As shown in the schematic for the new technique, transfers of the analog information across the isolated boundary are made by interrupting the signal flow, with a switch, in such a manner as to produce an alternating (square-wave dc) signal which is applied to the transformer. The transformer is in a feedback loop which prevents its driving requirements and parasitic inductances from having a degrading effect on performance.

During circuit operation, the voltage at point A is zero when the input and output voltages are normal and alike. When a difference appears between the input and output voltages, an error signal is developed on the operational amplifier at point A. This generates the required drive to return the input and output to similar voltage values. The circuit could be used for monitoring responses in the human body electrically, without presenting the danger of shock hazard to the

subject caused by ground loops or other electrical problems.

Note:

No further documentation is available. Specific questions, however, may be directed to:

Technology Utilization Officer
Langley Research Center
Mail Stop 139-A
Hampton, Virginia 23665
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Patent status:

NASA has decided not to apply for a patent.

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Category 02, 05